349 springs. In early morning 2 men hid inside blind;
224 as birds, small game came to water one man shot them, other went outside to gather them in. This done chiefly on piñon expeditions. Traps, blinds, etc., used especially on camp-hunting expeditions, when men, women went E to desert in small groups to camp for week or so and gather food (SM; Voegelin, 1935 b, 211).

223 Waterfowl shot with bow and arrow; mud hens when very fat "couldn't fly; it was easy to shoot
[373] them" (SM). Lighted torches, made from sticks on which pitch had been smeared, waved under trees where quail roosting at night; as birds flew down they were easily clubbed. Inflammable brush never piled up and fired to attract waterfowl; live or stuffed birds not used as decoys.

252 Preparation of animal food.- Deer, other large game skinned while warm as it lay on ground; incisions made with stone knife as among Havasupai (Spier, 1928, 111); skin removed with knuckles of closed hand; "not much fat left on hide when it was skinned this way" (SM). Entire deer utilized; meat, guts laid directly on live coals to broil; meat never eaten raw, preferred "half done." Bones
● [387] roasted, cracked, and marrow extracted. Old people with few teeth given liver (nï·man), which they pounded in small mortars or on flat rock. Flesh of other large game also either broiled on coals or stewed in clay pots; birds gutted (not gutted, MM), and plucked, roasted in ashes or impaled on stick and roasted over fire. Rabbits skinned, gutted, and broiled on coals, roasted in ashes, or stewed. Raccoons, of which Tübatulabal "ate lots," squirrels, woodrats gutted, hair singed off, roasted whole in hot ashes. All small game removed from ashes with "any kind of a stick." Deer head roasted in pit oven (šo·li·l, hole). Hole dug in ground, sides and bottom lined with flat rocks heated on open fire; head, unwrapped, denuded of horns, put into pit, covered with hot flat rock and pit sealed with sand or earth. Pit
[177] opened 12-14 hours later; head generally put in around sundown, taken out and eaten next morning. Cow heads now occasionally roasted in this way.

226 Fish and mollusks.- Fish, both fresh and dried,
131 of importance in Tübatulabal diet. Obtainable in South Fork of Kern r., augmented and unaugmented Kern, streams such as Erskine creek, former lakes in South Fork valley, mt. lakes in hinterland. Fish (kuyu·l) included trout (ha'ayal), said to be native in mt. creeks (SM, FP), whitefish or bullheads (co·h), suckers (nimal), catfish (kaŋa·ganan), minnows (ko'oši'). Whitefish caught in irrigation ditches 30 yrs. ago so large that "when a man carried one over his shoulders, the tail of the fish scraped the ground" (FM); MM said man could hardly lift some of fish caught in corrals (below) and FP commented on how large fish were formerly.

Fresh-water mussels (čono', twins), which Gifford suggests are probably Anodonta oregonensis,

824 (Gray) Greene; Lycum cooperi Gray; Marrubium
137 vulgare L.; Malacothrix californica DC.; Melilotus indica All.; Mimulus gluttatus D.C., M. cardinalis Dougl.; Mirabilis laevis (Benth.) Curran; Montia perfoliata (Donn) Howell; Nama demissum Gray; Oenothera alyssoides and O. alyssoides T. & G. var. decorticans Jepson, O. bistorta Nutt., O. caespitosa Nutt., O. contorta Dougl., O. pallida Lindl., O. palmeri Watson, O. scapoidea T. & G.; Pallaea and romedaefolia Fee; Penstemon laetus Gray, P. palmeri Gray, P. breviflorus Lindl.; Phacelia tanecilifolia Benth., P. hispica Gray var. cicutaria McB.; Platystemon californicum Benth.; Polygonum persicaria L.; Ranunculus aquatilis L.R. var. cymbalaria Pursh.; Rumex crispus L., R. hymenosepalus Torrey; Senecio douglasii DC.; Sidalcea malvaeflora Gray; Sisymbrium incisum Engelm.; Sphaeralcea (Malvastrum) exile (Gray) Jepson; Stenotopsis linearifolius (DC.) Rydb.; Stephanomeria exigua Nutt. var. pentachaeta Hall, S. virgata Benth.; Tropidocarpum gracile Hook.; Vaccaria vulgaris Host.

This list probably represents only small fraction of indigenous plants available to Tübatulabal, of which they made no use; it serves to illustrate, in concrete fashion, selective processes at work, among people of hunting-gathering culture, in their utilization of their floral environment, and negative rôle which part of that environment played in their culture.

Plants put to other ethnobotanical uses, for curing, house building, etc., referred to in discussions of these subjects.

222 Gathering of plant food.- When acorns ripe,
[462] "all the people except very old persons and young children went together to get them" (SM); women chiefly collected them while men hunted, trapped.
251 Acorns gathered from ground in small conical baskets, transferred when baskets full to large basket, in which they were brought back to camp and spread out on deerskins, tule mats for 3-4 days to dry, this preventing acorns from sweating when cached; then stored at acorn grounds, in elevated caches. Acorns gathered near home packed back to hamlets, cached near houses.

222 When berries ripe on shrub (opo·bol), Rhamnus
824 californica cuspidata (Greene) Wolf, which grows in foothill floral area, "the people knew piñons were ready to be gathered in the mts. So some men went out first to see where the piñons were good; just any men went; they decided, and then everybody went to the places where these men said the nuts were plentiful" (SM). All inhabitants of
● [887] hamlet or of several hamlets went together; sometimes very old persons might not stay at piñon camp when weather became too cold, but return to hamlet alone. Piñons gathered when cones reached maturity, but before they had opened; men, boys knocked cones off trees with staves or pulled down branches with "shepherd's crook" staff; men, women picked up cones, put them in conical lug baskets which were emptied into larger conical

[276] Lime.- Tobacco as prepared above used with
317 lime (či·ut), obtained from calcareous deposits in South Fork valley, from burnt fresh-water mussel shells, or by magical means. Lime from deposits dug out of ground near surface of soil in form grayish, powdery mass which was put in fire and burned; sometimes water poured over it to "make it stronger" (ES). Informants said slaking aboriginal technique. Shells of river mussels also burned and pounded to powder in pit mortars.
789 In order to obtain lime by magical means, "an old man used to go to a spring E of Fay creek and scatter eagle down on the water, saying, 'Give me your lime'; then the old man would leave the spring and go and lie down in the shade for about 2 hours. When he returned to the spring the lime would be piled up for him at the edge of the spring, ready for him to take away. An old woman who lived in the spring, šo·ubišt, gave him the lime. Anyone could get lime that way" (SM).
276 Tobacco and lime mixed by taking chunk of tobacco broken off ball, equivalent to teacupful, putting this, together with tablespoonful of lime, into small portable stone mortar kept in house for this purpose, and pounding 2 ingredients with small pestle 3-5 in. long, until they were of consistency of snuff. In aboriginal times this snuff-like admixture (šo'ogonht) kept in container made from horn of mt. sheep (SM).

Uses.- Tobacco and lime chewed, drunk, snuffed, eaten by men and women, and also used as offering. For chewing, pinch of mixture sprinkled in palm of hand and palm licked off; FP when using tobacco and lime applied tongue directly to contents of her open tobacco container, which happened to be tin snuff box. Tobacco and lime, mixed with water, also made into small pellets size of marbles; one of these held on tongue for minute or 2, then spit out into palm of hand; this done 6-7 times a day, whenever person felt like it; made person feel "dizzy" and "drunk" (MM). Tobacco without lime never used for any form of chewing; it was "no good, and made one feel sick; taken with lime it tastes peppery and strong" (SM). Many persons chew habitually; children 6 yrs. old "too young to chew tobacco" according to LT, who added, however, that her own son, barely 6, "likes to take it whenever he can get it."
757 Before retiring at night tobacco and lime,
278 mixed with water, drunk; this causes vomiting whereby stomach is rinsed out and person assured of sound, dreamless slumber. Cupful of decoction sufficient for 6 people; those who drank tobacco thus "mainly old people, although young ones sometimes drank it, too" (MM). SM in 1932 drinking tobacco every night; "he doesn't dream bad dreams then" (MM). Whether person took it alone or with group optional.
[756] Tobacco without lime smoked by old men and by
276 male shamans while curing patients. Women and female shamans or witches did not smoke. Chunk
887 of tobacco broken off ball, finely crushed in

276 small mortar, and powdery substance stuffed into
●867 tubular pipe (wo·ša·giništ) made from 4- to 10-
in. length of hollow cane (paha·bul), Phragmites
communis Trin. Old men smoked once or twice
daily while in sweat house or after morning,
evening meals, "not all the time, like people
do now" (MM). Smoker held pipe horizontally;
took long slow puff from it, inhaling deeply,
then removed pipe from mouth and closed lips;
exhaled smoke slowly through nostrils. "The
smoke went up from the smoker's lungs right to
the top of his head, because that smoke was so
strong" (MM). From 2-3 such long puffs, no more,
taken at one smoking; tobacco so strong it soon
caused smoker to tremble violently as though
intoxicated. After indulging thus, smoker extin-
guished pipe by rubbing it in palm of hand, then
set it aside for future use. When tobacco in
[323] pipe consumed, cane tossed away. Pottery pipe
not used; steatite pipes used by rain makers.

171 Distributional discussion.- In general dis-
276 cussions of the use of tobacco in North America
the trait of chewing tobacco with lime is men-
tioned as having a continuous distribution from
the North Pacific Coast tribes S through the
greater part of Calif. (Linton, 2; Wissler, 26,
fig. 6; Sayce, 200; West, 99-100). Dixon, how-

Tribe	Tobacco species	Native names
C.,S. Miwok	N. bigelovii	ka'sü; kaku; hü'tla
W. Mono		pamu; cokx
O. V. Paiute	N. attenuata	pämüpi; pähmü; sägö
Koso		sohon, shogun
Tübatulabal	N. bigelovii; N. attenuata	šo'ogonht
Kawaiisu	N. attenuata; N. trigonophylla	soóda; koópi
Yokuts		sohow, personal name of plant; só.Gon, tobacco, tobacco plant; ba'um, tobacco smoke, cigarette
Costanoan		
Salinan		
Chumash	N. species	
Kitanemuk	N. species	tsiwut
Alliklik	N. species	
Gabrielino	N. species	shuki
Cahuilla	N. attenuata	pivat

[p. 38(a)]

881 Lack of definite ceremony at this time discussed further in section on Rituals. Menstruating woman not subject to speech taboos; prepared food; slept with husband, but had no sexual intercourse with him, as this would affect his hunting; this latter taboo not strictly adhered to now (MM).

[841]

838 Transvestites.- Male transvestite (huiy) wore woman's aprons; mother taught him to gather, prepare acorns, tobacco, make baskets, pottery; transvestite would "stay around with the women," but SM did not know of any marriages entered into by transvestites. They were not doctors, clowns, or corpse-handlers. Transvestites never openly ridiculed, although SM appeared amused, chuckled over remembrance of transvestite he had once seen.

761 Death.- All deaths, including accidental ones,
763 attributed to witchcraft or poisoning. Death determined "when all the breath goes out" (SM). Immediately after death one of relations addressed corpse: "Go good, don't turn around. Don't think of us again, you are going to another place" (SM). Dead went to a·bo·no·li·mak, a land to E described in Orpheus myth (Voegelin, 1935 b, 203).

764 Body kept in house overnight; relatives,
[765] friends assembled, wailed throughout night; "one person would start crying, then everybody would
767 cry" (FP). Following day corpse wrapped in tule mats, taken from house by 2 old women corpse-
887 handlers (u·hu·yahm) and buried in shallow grave 1/8-mi. or so away from hamlet, on rocky hillside under shelving rocks. "Every hamlet (?) had 2 old women whose regular job it was to take away the bodies and bury them; they packed the corpse on their backs, each one half of the way; when they returned they washed well in plain warm water and were paid a little bit by the dead person's relatives" (SM). FP said men took corpse away for burial; "the corpse-handlers just washed their hands afterward, but some people were afraid to touch the corpse; they thought it would make them sick." Body buried in extended position, face up, head toward W; eyes not covered (SM).

[766] Bodies of those who died away from home brought back for burial if possible; flesh not cremated off bones first; those killed in war away from home buried on spot (FP).

765 Within one or two days following death of husband, parent, or offspring, woman burned her hair shoulder length or shorter; men did not do this. Woman did not wash face; painted it red (SWN); did not paint it (FP). After death of certain relatives man or woman could not eat meat, grease, fish until he or she had had face washed by man, woman outside family (see section on Rituals); this taboo obligatory after death of spouse, child, even though latter only 4, 5 yrs. old, and brother's or sister's adult children and, for man, brother's wife or wife's sister,

426 Borrowing of clamshell money frequent in wintertime, "to pay for dry meat"; in summer "they didn't do that, because they had lots then, lots of seeds." No interest charged; borrower "just brought back whatever amount he had borrowed" (SM).

462 Division of labor.- Men and women both actively contributed to solving problem of basic subsistence, but along some lines of endeavor connected with subsistence there was well-established division of labor on sex basis. Men hunted, skinned their kill and packed home meat; speared fish, made corrals, and obtained salt. Women might help them in minor way during coralling of fish or at rabbit drives, but these essentially masculine enterprises. Women gathered vegetable foods, tobacco, prepared such for consumption; procured wood and water necessary for roasting, boiling various foods. They manufactured salt from salt grass and sweets from cane. Pounding of foodstuffs markedly woman's task and was frequently mentioned as hardest of her domestic occupations. On whole, men's duties usually called for expenditure of appreciable amount of vigorous, but sporadically applied exertion; women's tasks lighter, but lasted longer, more continuously pursued. Practically qualitative differences in physical capacities of men and women recognized by Tübatulabal, but this recognition remained largely unconscious, as myth given below shows. Also other factors, such as environmental considerations and age of men particularly, regulated matter of sexual division of labor; manner in which these several factors operated illustrated in customary activities of men, women when gathering piñons and acorns. At piñon harvest adult men and boys climbed trees to knock off cones, while women gathered cones from ground, prepared brush bed for roasting them and worked with men in taking nuts out of cones. Men [887] did some hunting at piñon grounds, as MM's autobiography shows (Voegelin, 1935 b, 227), but SM said few deer ranged to E where piñons abundant, so men did not occupy themselves with hunting much at this time, although old men might do some trapping. At acorn grounds, however, where deer came to feed on acorns and were plentiful, men hunted almost exclusively while women gathered acorns, which fell from trees and only needed to be picked up and dried (SM).

Another example of interplay of various factors which guided sex regulation of labor illustrated in tending and pruning of tobacco plants. [887] Ordinarily all this was done by women, but it was not unusual for old couples to work together pruning and harvesting plants (see Autobiography of FP); this part of tobacco process required greatest amount of physical activity. Rarely, if ever, though, did old man run counter to basic pattern and help his wife pound or "cook" tobacco.

Why hunting man's work, preparation of food

516 knee up; this commonest sitting position, referred to as mi·išit. (b) When sitting leaning against tree or other back rest, legs extended straight forward, feet crossed. (c) Sometimes sat Turk fashion, but "not much" (SM).

Women sat (a) right knee bent, right leg and inner side of foot extended backward on ground, with weight of body resting on right heel; left foot flat on ground, knee up. (b) Both legs bent under body, weight of body resting on ground, feet slightly protruding from under left thigh. (c) When sitting against tree, legs extended straight forward, feet crossed. (d) Turk fashion often used when working with materials in lap. (e) When using large portable mortars, women sat with legs extended straight out in front on either side of mortar.

516 482 ● 887 Men, women used cane (nahat), 4-5 ft. long, made of willow or hard wood, "when packing something heavy"; older people used it as aid in walking over rough country; cane kept in house as regular article of use.

201 [171] [773] [537] Direction indicated by turning head, tossing it slightly and pouting lips noticeably; FP did this habitually, SM less markedly. Amused semi-embarrassment or surprise indicated as among Mohave (Kroeber, Handbook, 729); MM, a man, used this gesture frequently, ES, a woman, sometimes; myth refers to its use by Coyote (Voegelin, 1935 b, 199). Informants gestured frequently while narrating myths, etc.; also to some degree in ordinary conversation. <1

AESTHETICS AND KNOWLEDGE

517 Aesthetics.- Although art forms relatively undeveloped save in province of basketry, Tübatulabal were not lacking in sense of aesthetic appreciation. In describing water bottles, FP, LT commented on how "pretty" container looked with red earth smeared over outside. ES thought raccoons had "pretty fur" and wondered immediately afterward why "the old timers never used coonskins." FP consented to be tattooed because it would look pretty and her autobiography contains several [823] references to prettiness of certain objects. In commenting on landscape, however, the economic possibilities seemed of paramount importance; MM's reaction to towering wall of Sierras between Independence and Bishop, in Owens Valley Paiute region, was that the mts. were "too bare"; FP's comment about desert to E was that "one couldn't get anything to eat there."

Sketches of design elements for baskets brought forth only one comment from ES, that certain design was "hard to make." However, in another department of basketry aesthetic appreciation was manifested. Although FP stated that piñon jars (see section on Basketry) "were not given away much; they were just made to put piñons inside," and ES agreed with FP about utilitarian purposes these jars were put to, it was my impression that

1/v [The quick placing of the hand over the mouth.-- Analyst]

If person
787 in jimsonweed trance saw another person lacking
276 eyes, nose, leg, etc., it meant latter was going to die. This was why onlookers were afraid of person under influence of jimsonweed (FP). When person swallowed ants, number of ants he vomited foretold how long he would live.

RITUALS

788 Three rituals important among Tübatulabal: taking of jimsonweed to gain supernatural assistance, face washing to remove meat taboo, and mourning ceremony.

886 Jimsonweed.- All boys, girls past puberty
788 urged to drink jimsonweed decoction in order to
796 obtain long life (ho·nun), but rite not obliga-
276 tory; "if they wanted to, they took jimsonweed; some were afraid to take it. Maybe if they didn't take it they'd die, when sickness came" (SM). Adults also drank jimsonweed to obtain visions; some persons took it several times.

[887] Group of 5-6 boys, or boys and girls, who were
788 to take drink were put in charge of old man, who
796 took them into sweat house on winter evening,
276 kept them there for 3 nights, days. No speeches made to young people during this time (SM); each morning they were given infusion of plant medicine to induce vomiting, and underwent same dietary restrictions to which person taking jimsonweed for medicinal purposes was subjected.

During morning of third day old man in charge dug jimsonweed roots; before digging them he addressed plant, saying, "Here I am digging you now; I want you to give these people something
[462] when they drink you, so they will have long life." Women never dug roots or administered drink. After roots dug, old man macerated them with round flat stone on metate, put them in large watertight basket filled with water and allowed them to soak for 10-12 hrs. In evening he strained off liquor into cooking basket; around sunset gave it to vision seekers to drink. If 6 persons drinking, about 2 gallons decoction prepared, each person taking one long drink. Decoction caused drinkers to fall into stupor which lasted until about midnight or longer; SM said they were not turned during sleep; FP said they were. When they awakened their eyes "were all red and
[787] watery."

Visionaries fasted entire day after drinking jimsonweed; in 6 days considered to have recov-
[262] ered from effect of taking drug, and could by then drink thin acorn mush; refrained from eating meat or grease for 2 months.

Individuals, either adults or young boys, girls, fasted, drank decoction, either in their own house or in open, in foothills. Often father gave jimsonweed to son or daughter thus; women did not administer the drink.

787 While visionary in stupor induced by drug,
276 various animals appeared to him; one such might
776